

We claim:

1. A solid, acid catalyst for the preparation of  
5 polytetrahydrofuran, polytetrahydrofuran copolymers, diesters  
or monoesters of these polymers by polymerization of  
tetrahydrofuran in the presence of at least one telogen  
and/or comonomer, in the form of a clay material which  
10 comprises at least 20% by weight of  $\text{SiO}_2$  and at least one  
further oxide of an element selected from the group  
consisting of Al, Fe and the elements of groups III A to  
VII A of the Periodic Table, has a proportion of  
alkali-soluble silicon dioxide of from 20 to 85% by weight,  
where the catalyst is a catalyst which has been calcined at  
15 from 150 to 800°C and has an  $\text{N}_2$  pore volume of at least  
0.35  $\text{cm}^3/\text{g}$  for pore diameters in the range from 2 to 200 nm,  
with at least 0.2  $\text{cm}^3/\text{g}$  of this  $\text{N}_2$  pore volume being made up  
by pores having diameters in the range 5-50 nm and the mean  
BJH pore diameter (4V/A) of the pores in the range from 2 to  
20 200 nm being from 2.0 to 10.0 nm, has a BET surface area of  
at least 160  $\text{m}^2/\text{g}$  and has an acid center density of at least  
0.25 mmol/g for  $\text{pK}_a$  values of from 1 to 6.
2. A catalyst as claimed in claim 1, wherein the clay material  
25 has a methylene blue value of at least 250 mg/g.
3. A catalyst as claimed in either of claims 1 and 2, wherein  
the clay mineral is a sodium bentonite.
- 30 4. A process for preparing polytetrahydrofuran,  
polytetrahydrofuran copolymers, diesters or monoesters of  
these polymers, which comprises polymerizing tetrahydrofuran  
in the presence of at least one telogen and/or comonomer and  
in the presence of a catalyst as claimed in any of claims 1  
35 to 3.
5. A process as claimed in claim 4, wherein tetrahydrofuran is  
polymerized in the presence of carboxylic anhydrides,  
preferably acetic anhydride, to give polytetrahydrofuran or  
40 derivatives and copolymers thereof having molecular weights  
of from 250 to 10000 dalton.

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**ART 34 AMDT**

AMENDED SHEET